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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/474,479 | 12/29/1999 | TSUYOSHI ODA | 450101-2980.2 | 2297 |

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| EXAMINER | |
|---|---|
| RAO, ANAND SHASHIKANT | |
| **ART UNIT** | **PAPER NUMBER** |
| 2613 | 6 |

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



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| Office Action Summary | Application No. 09/474,479 | Applicant(s) ODA, TSUYOSHI | |
|---|---|---|---|
| | Examiner Andy S. Rao | Art Unit 2613 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *1-15* is/are allowed.

6)☒ Claim(s) *16-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

**DETAILED ACTION**

***Reissue Applications***

1. Applicant is reminded of the continuing obligation under 37 CFR 1.178(b), to timely apprise the Office of any prior or concurrent proceeding in which Patent No. 5,703,646 is or was involved. These proceedings would include interferences, reissues, reexaminations, and litigation.

Applicant is further reminded of the continuing obligation under 37 CFR 1.56, to timely apprise the Office of any information which is material to patentability of the claims under consideration in this reissue application.

These obligations rest with each individual associated with the filing and prosecution of this application for reissue. See also MPEP §§ 1404, 1442.01 and 1442.04.

***Claim Objections***

2. Claims 16-25 are objected to because of the following informalities:

A). Claim 16, line 8, "more complexity" should be "more complex".

B). Claim 17, line 7, "more complexity" should be "more complex".

C). Claim 18, line 8, "more complexity" should be "more complex".

D). Claim 19, line 8, "more complexity" should be "more complex".

E). Claim 20, line 10, "more complexity" should be "more complex".

F). Claim 21, line 11, "more complexity" should be "more complex".

G). Claim 22, line 10, "more complexity" should be "more complex".

H). Claim 23, line 11, "more complexity" should be "more complex".

I). Claim 24, line 11, "more complexity" should be "more complex".

J). Claim 25, line 9, "more complexity" should be "more complex".

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 16-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Reininger et al., (hereinafter referred to as "Reininger").

Reininger discloses an encoding method for encoding source video data, the method comprising steps of: encoding said source video to generate first encoded data (Reininger: column 2, lines 58-63); detecting a difficulty (Reininger: column 3, lines 55-65)) of the encoding process of source video data based on a bit amount of said first encoded data (Reininger: column

3, lines 40-55); deciding an optimum quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple; and encoding said source video data by using said optimum quantization step on encoding unit basis (Reininger: column 4, lines 25-65), as in claim 16.

Reininger discloses an encoding method for encoding source video data, the method comprising steps of: calculating a difficulty (Reininger: column 3, lines 55-65) of the source video data (Reininger: column 3, lines 40-55) wherein said difficulty indicates a complexity of a picture within said source video data (Reininger: column 9, lines 45-55); deciding an optimum quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple; and encoding said source video data by using said optimum quantization step (Reininger: column 4, lines 25-65), as in claim 17.

Reininger discloses an encoding method for encoding source video data, the method comprising steps of: encoding said source video to generate first encoded data (Reininger: column 2, lines 58-63); detecting a difficulty (Reininger: column 3, lines 55-65)) of the encoding process of source video data based on a bit amount of said first encoded data (Reininger: column 3, lines 40-55); calculating an allocated code quantity (Reininger: column 3, lines 1-25) which is varied depending on said difficulty so that said allocated code quantity is increased when said source data is more complex and said allocated code quantity is decreased when source video

data to be encoded is more simple; and encoding said source video data by using said allocated code quantity (Reininger: column 4, lines 60-68), as in claim 18.

Reininger discloses an encoding method for encoding source video data, the method comprising steps of: calculating a difficulty (Reininger: column 3, lines 55-65) of the source video data (Reininger: column 3, lines 40-55) wherein said difficulty indicates a complexity of a picture within said source video data (Reininger: column 9, lines 45-55); and calculating an allocated code quantity (Reininger: column 3, lines 1-25) which is varied depending on said difficulty so that said allocated code quantity is increased when said source data is more complex and said allocated code quantity is decreased when source video data to be encoded is more simple; and encoding said source video data by using said allocated code quantity (Reininger: column 4, lines 60-68), as in claim 19.

Reininger discloses an encoding method for encoding source video data, the method comprising steps of: detecting motion vector of a macro block of said source video data (Reininger: column 6, lines 40-45); encoding said macro block of said source video data by using said detected motion vector to generate first encoded data (Reininger: column 8, lines 20-30); detecting a difficulty (Reininger: column 3, lines 55-65) of the encoding process of source video data based on a bit amount of said first encoded data (Reininger: column 3, lines 40-55); deciding an optimum quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple; and encoding said source macro block of said source video by using

said optimum quantization step and said detected motion vector (Reininger: column 4, lines 25-65), as in claim 20.

Reininger discloses an encoding method for encoding source video data, the method comprising steps of: selecting a predictive mode of a macro block of said source video (Reininger: column 8, lines 20-30); encoding said macro block of said source video data by using said selected predictive mode to generate first encoded data (Reininger: column 8, lines 20-30); detecting a difficulty (Reininger: column 3, lines 55-65) of the encoding process of source video data based on a bit amount of said first encoded data (Reininger: column 3, lines 40-55); deciding an optimum quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple; and encoding said source macro block of said source video by using said optimum quantization step and said selected predictive mode (Reininger: column 4, lines 25-65), as in claim 21.

Reininger discloses an encoding apparatus for encoding source video data, the apparatus comprising steps of: means for detecting motion vector of a macro block of said source video data (Reininger: column 6, lines 40-45); first encoding means for encoding said macro block of said source video data by using said detected motion vector to generate first encoded data (Reininger: column 8, lines 20-30); means for detecting a difficulty (Reininger: column 3, lines 55-65) of the encoding process of source video data based on a bit amount of said first encoded data (Reininger: column 3, lines 40-55); means for deciding an optimum quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said

quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple; second encoding means for encoding said source macro block of said source video by using said optimum quantization step and said detected motion vector (Reininger: column 4, lines 25-65), as in claim 22.

Reininger discloses an encoding apparatus for encoding source video data, the apparatus comprising: means for selecting a predictive mode of a macro block of said source video (Reininger: column 8, lines 20-30); first means for encoding said macro block of said source video data by using said selected predictive mode to generate first encoded data (Reininger: column 8, lines 20-30); means for detecting a difficulty (Reininger: column 3, lines 55-65) of the encoding process of source video data based on a bit amount of said first encoded data (Reininger: column 3, lines 40-55); means for deciding an optimum quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple; and second encoding means for encoding said source macro block of said source video by using said optimum quantization step and said selected predictive mode (Reininger: column 4, lines 25-65), as in claim 23.

Reininger discloses an encoding apparatus for encoding source video data, the apparatus comprising: first means for encoding said macro block of said source video data by using said selected predictive mode to generate first encoded data (Reininger: column 8, lines 20-30); second encoding means for encoding said source based on a supplied quantization step size to

generate second encoded data (Reininger: column 4, lines 1-24); control means for detecting a difficulty (Reininger: column 3, lines 55-65) of the encoding process in said first encoding means (Reininger: column 3, lines 40-55), and for deciding said quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple (Reininger: column 4, lines 25-65), and said quantization step which is varied depending on a remaining capacity of said transmitting buffer so as to suppress overflow and underflow in said transmitting buffer (Reininger: column 6, lines 25-35), as in claim 24.

Reininger discloses an encoding apparatus for encoding source video data, the apparatus comprising: encoding means for encoding said source based on a supplied quantization step size to generate an encoded stream (Reininger: column 4, lines 1-24); control means for detecting a difficulty (Reininger: column 3, lines 55-65) of said source video (Reininger: column 3, lines 40-55), wherein said difficulty indicates a complexity of a picture within said source video data (Reininger: column 9, lines 45-55) and for deciding said quantization step size (Reininger: column 5, lines 35-50) which is varied depending on said difficulty so that said quantization step size becomes smaller when said source data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple (Reininger: column 4, lines 25-65), and said quantization step which is varied depending on a remaining capacity of said transmitting buffer so as to suppress overflow and underflow in said transmitting buffer (Reininger: column 6, lines 25-35), as in claim 25.

***Allowable Subject Matter***

5. Claims 1-15 are allowed.

Independent claims 1-7, 11, and 15 are now directed towards using a encoding difficulty parameter, *derived from I-frame and P(forward) bit data only*, for coding bit allocation in motion compensated coding (I,P,B), wherein the coding selection occurs according to the generated encoding difficulty parameter. This encoding difficulty parameter as recited in the claims now distinguishes applicant's coding process over the Reininger disclosure which takes into account difficulty coding parameters for all three modes (I,P,B), for controlling quantization. Dependent claims 8-10 and 12-14 are allowable for the reasons discussed above.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (703)-305-4813. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S. Kelley can be reached on (703)-305-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-6606 for regular communications and (703)-308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-4700.

Andy S. Rao
Primary Examiner
Art Unit 2613

ANDY RAO
PRIMARY EXAMINER

asr
April 18, 2003